WATER RESOURCES DIVISION

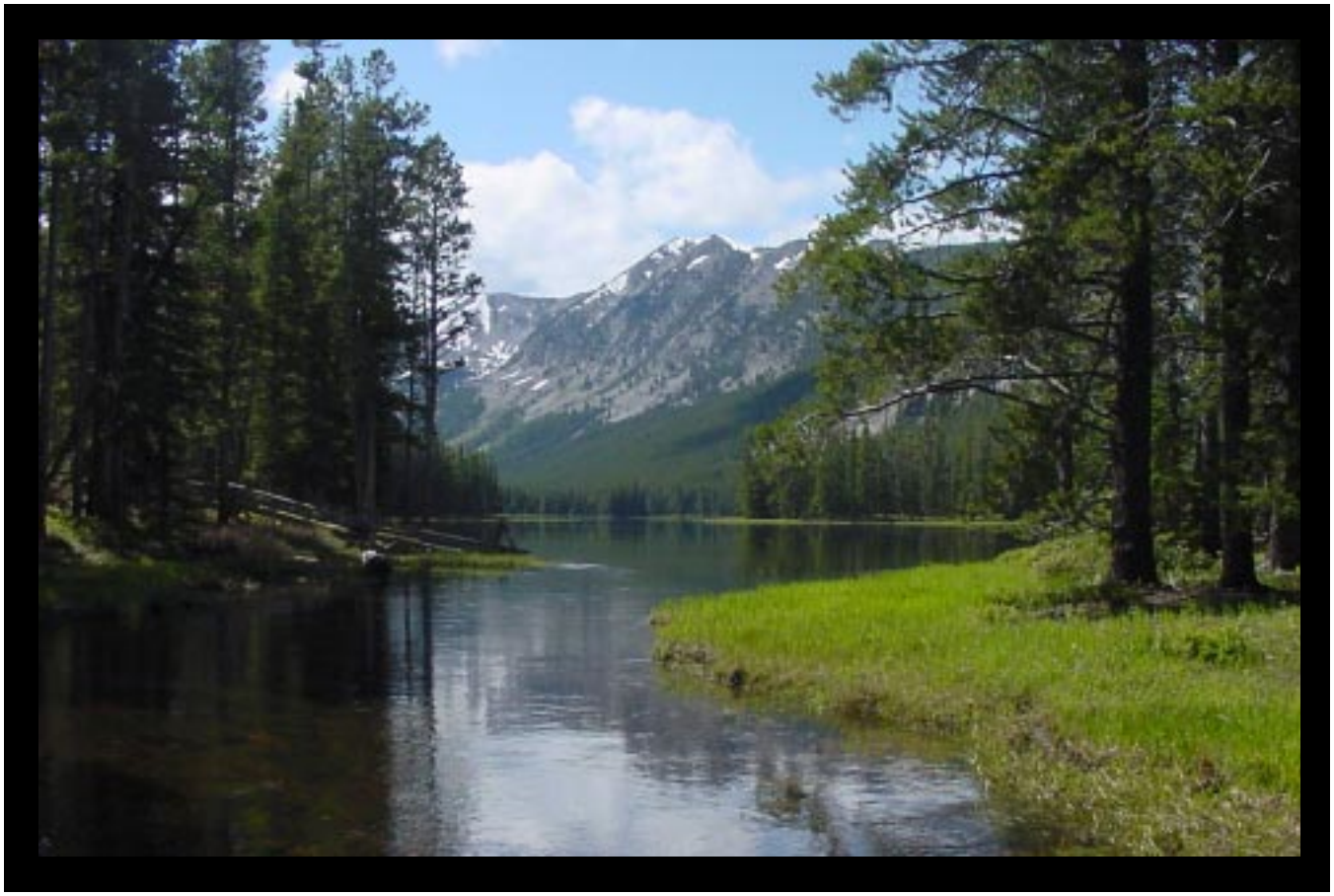


PHOTO BY MIKE ROBERTS

TWIN LAKES

WATER RESOURCES DIVISION

Providing the most benefit, through the best use, of the state's water resources for the people of Montana.

The Montana Constitution affirms that the state's water resources are owned by the State of Montana and are to be used by its people. DNRC has the statutory responsibility to ensure that the state's water resources are managed to meet the existing and future needs of its citizens.

The Water Resources Division (WRD) is comprised of four bureaus — the State Water Projects, Water Management, Water Operations, and Water Rights Bureaus — and eight regional offices. The division employs approximately 115 persons, with staff members stationed in Helena's central office and in the regional offices in Billings, Bozeman, Glasgow, Havre, Helena, Kalispell, Lewistown, and Missoula.

Further information about the division and Montana water resources can be found on the division's website at:

www.dnrc.state.mt.us/wrd/home.htm

State Water Projects

The State Water Projects Bureau administers the operation, management, and rehabilitation of the state-owned dams, canals, and hydropower projects listed in Tables 32 and 33; DNRC also owns these facilities. DNRC also provides professional engineering and rehabilitation assistance on the projects listed in Table 34, which are owned by the Department of Fish, Wildlife and Parks (DFWP). The State Water Projects Bureau administers 1,965 water purchase contracts though local water user associations that operate the projects and market the water for irrigation and other purposes. The revenue from the water purchase contracts and leases of lands associated with the projects (see Table 35) supplements funds for state water project rehabilitation costs. Debt repayment funds are derived from repayment contracts with water users. The bureau ensures that the projects are operated and maintained in a safe, efficient manner and that repayment contracts are properly administered.

Project Rehabilitation

The Project Rehabilitation Program identifies and corrects safety and operational deficiencies on state-owned projects. Projects that were rehabilitated, were partially rehabilitated, or had major repairs completed during FY 2004 include Painted Rocks Dam located near Conner, Ackley Lake Dam located near Hobson, and Nevada Creek Dam located near Helmville. Contract preparation was also completed for the selection of a consultant for the upcoming rehabilitation of the North Fork of the Smith River Dam.

Painted Rocks Dam Repairs

The spillway log boom broke during runoff in 2003 and was replaced in the spring of 2004. The cost of the log boom was approximately $21,000. Contracts to build the log boom and to install a fence blocking public access to the spillway were awarded to a Helena construction company. The estimated cost of the fence is $5,000. The fencing project is scheduled to begin in August 2004.

Table 32
Dams Managed by the State Water Projects Bureau
and Owned by DNRC

Reservoir	Year Completed	Storage (acre-ft.)	High Hazard[1]	Operation and Maintenance Manual in Place	Emergency Action Plan in Place	County
Ackley Lake	1938	5,975	Yes	Yes	Yes	Judith Basin
Bair	1939	7,029	Yes	Yes	Yes	Meagher
Broadwater-Missouri (Toston)	1940	3,000	Yes	No	Yes	Broadwater
Cataract	1959	1,478	Yes	Yes	Yes	Madison
Cooney	1937	28,140	Yes	Yes	Yes	Carbon
Cottonwood	1953	1,900	Yes	Yes	Yes	Park
Deadman's Basin Dam and Dike	1941	76,900	Yes	Yes	Yes	Wheatland
East Fork of Rock Creek (Flint Creek)	1938	16,040	Yes	Yes	Yes	Granite
Fred Burr	1948	516	No	Yes	Yes	Ravalli
Frenchman	1952	3,752	No	No	Yes	Phillips
Glacier (two dams)	1937	4,200	Yes	No	Yes	Carbon
Martinsdale (two dams)	1939	23,080	Yes	Yes	Yes	Wheatland
Middle Creek (Hyalite)	1951	10,184	Yes	Yes	Yes	Gallatin
Nevada Creek	1938	12,640	Yes	Yes	Yes	Powell
Nilan (two dams)	1951	10,092	Yes	Yes	Yes	Lewis and Clark
North Fork Smith River	1936	11,500	Yes	Yes	Yes	Meagher
Painted Rocks	1940	32,362	Yes	Yes	Yes	Ravalli
Ruby	1939	38,850	Yes	Yes	Yes	Madison
Tongue	1939	79,071	Yes	Yes	Yes	Big Horn
Willow Creek	1938	18,000	Yes	Yes	Yes	Madison
Yellowater Dam and Dike	1938	3,840	Yes	Yes	Yes	Petroleum

1. A *high hazard* dam is one whose failure would endanger lives. This classification is not a reflection on the actual condition of the dam.

Ackley Lake Dam Repairs

A seepage area located downstream from the toe of the dam has been observed for many years. The amount of standing and flowing water at this location varies with the level of the reservoir. On June 14, 2004, a small amount of flowing seepage was observed, and a white, clayey material appeared to have been deposited in the area. On June 22, 2004, a hole approximately 2 inches in diameter was detected, and the flow rate had increased slightly. On June 25, 2004, a sand-and-gravel filter blanket was placed over the area to prevent any further erosion and enlargement of the hole. The Ackley Lake Water Users Association provided the equipment used to spread the sand and gravel, which had been purchased from a concrete supplier in Lewistown. The bureau is currently investigating the site and will design remedial repairs for implementation in 2005.

Nevada Creek Dam Rehabilitation Project

Phase II of the rehabilitation, the construction of a new concrete spillway, was completed in January 2004. The reclamation phase, which includes final grading and reseeding of all disturbed areas, is currently underway and tentatively scheduled for completion by September 2004.

Table 33
Canals Managed by the State Water Projects Bureau
and Owned by DNRC

Project	Canal	Length (miles)	Capacity (cfs)
Ackley Lake	Supply Outlet	6.7	100
	Outlet	4.7	62
Broadwater-Missouri (Toston)	Main	1.5	342
	West	12.4	90
	East	34.3	262
Deadman's Basin	Supply	11.5	700
	Careless Creek	9.5	344
	Barber	2.9	200
East Fork of Rock Creek (Flint Creek)	Main	7.7	200
	East	5.8	63
	Marshall	16.0	56
	Allendale	13.0	125
	Metcalf	4.1	17
Little Dry	Little Dry	11.6	90
Middle Creek (Hyalite)	Cottonwood	4.1	77
Nevada Creek	Douglas	12.6	50
	North	13.4	49
Nilan	Supply	5.5	300
Rock Creek	Point of Rocks	2.3	50
	Finn	9.0	25
	Cottonwood	2.0	25
	Pryde	8.0	40
Upper Musselshell	Checkerboard	2.9	38
	North Fork Diversion	11.7	105
	Martinsdale Supply	2.4	408
	Martinsdale Outlet	2.6	333
	Two Dot	32.1	122

North Fork of the Smith River Dam Rehabilitation Project

The request for proposals process for the selection of a consultant to assist with the design and implementation of the upcoming North Fork of the Smith River Dam Rehabilitation Project was completed in the spring of 2004, and a Billings engineering firm was selected. A survey contract was also awarded to a Helena company for topographic and boundary surveying. The construction phase of the rehabilitation project, which includes installation of a new spillway, outlet terminal structure, and drain system, is tentatively scheduled to begin in 2005, pending the availability of funds.

Table 34
DFWP Projects with Engineering Services Provided
by the State Water Projects Bureau

Reservoir	Year Completed	Storage (acre-ft.)	High Hazard[1]	Operation and Maintenance Manual in Place	Emergency Action Plan in Place	County
Ashley Lake	Unknown	20,400	No	No	Yes	Flathead
Bearpaw	1958	535	Yes	Yes	Yes	Hill
Clearwater Fish Barrier (Lake Inez)	1963	>50	No	No	No	Missoula
Gartside	1962	326	Yes	Yes	Yes	Richland
Johnson	1930s	208	No	No	Yes	Hill
Knowlton	1890	166	No	No	Yes	Teton
Park Lake	1872	225	Yes	Yes	Yes	Jefferson
Rainy Lake Fish Barrier	Unknown	>50	No	No	No	Missoula
South Sandstone	1975	940	No	No	Yes	Fallon
Whitetail	1930s	198	No	No	Yes	Daniels

1. A *high hazard* dam is one whose failure would endanger lives. This classification is not a reflection on the actual condition of the dam.

Table 35
Leases Associated with DNRC-Owned Water Projects

Lease Type	Number of Leases	Annual Revenues
Cabinsite	27	$4,623
Grazing	5	4,335
Right-of-Way	1	43
TOTALS	33	$9,001

Seepage Monitoring

Seepage monitoring is required as a condition of the operating permits for all of the regulated high hazard dams in Montana. A *high hazard* dam is one whose failure would endanger lives. This classification is not a reflection on the actual condition of the dam. Twenty-two dams in DNRC's projects are classified as high hazard (see Table 32).

The seepage monitoring data collected on DNRC's projects are maintained in "DamSmart." DamSmart is a computer database that allows monitoring well data to be recorded, graphed, and compared with reservoir levels, weir and flume flows, and water conditions at the dam. These data are used in conjunction with annual inspections and monthly reviews.

The bureau received a Renewable Resource Grant to establish seepage-monitoring programs at four additional DNRC dams: Cataract, Painted Rocks, Willow Creek, and Yellowater. These four dams currently have minimal monitoring capabilities. The Willow Creek Dam instrumentation was completed during the fall of 2003. The other projects are scheduled for fall 2004.

Project Management

The Project Management Program administers the operation of the state-owned dams and canals and oversees the repayment contracts with the water user associations. Additionally, the program protects water rights for the projects and oversees the disposal of projects no longer appropriate for state ownership.

Property Management

Many years ago, the State of Montana constructed numerous water conservation projects because there was a need for government to create employment opportunities and stabilize the agricultural economy. Governmental involvement in some of these projects no longer provides public benefits, and these projects are being transferred to the local water user associations, water districts, or private ownership. This program also administers the property assets of active water projects. The following activities were accomplished during FY 2004.

- The transfer of the Flint Creek Canal project is in progress, and negotiations are continuing.
- Negotiations are ongoing to sell or transfer the historical Fitzpatrick Ranch property to an appropriate entity.
- Fieldwork and preliminary negotiations are being conducted on the Bainville flood control project.
- Preliminary file reviews, financial status determinations, title searches, and field reviews are ongoing on the Sehm, Pardis, Wold, Red Butte, and Deer Creek properties.
- The Big Lake property is currently being transferred to DFWP.
- Negotiations are ongoing with adjoining landowners to transfer the Stafford Reservoir.
- Quarterly inspections were conducted of the Badger Creek Ranch conservation easement.
- Annual inspections were performed of the cabin lease, grazing leases, and mineral leases.
- This program also acquired and granted various easements for the bureau's projects.

Canal Operations

The Canal Operations Program is responsible for identifying and correcting operational deficiencies of state-owned canals. The following activities were accomplished in FY 2004, in addition to routine repairs and inspections.

- The Ackley Lake Supply Canal was rehabilitated. Approximately 2 miles of the canal prism was reshaped to the

design grades and slopes. Two large metal arch pipes were relocated, and a new metal arch pipe was installed.

- A corroded corrugated metal pipe underpass was replaced with a high density polyethylene pipe to facilitate the flow of a small stream beneath the West Canal of the Broadwater-Missouri Project.

- To prevent oversaturation of the soils supporting an 80-foot drop structure, 440 feet of canal lining was installed on the Barber Canal, the chief delivery canal of the Deadman's Basin Project.

- The 65-year-old, 4,050-foot siphon on the Main Canal of the Flint Creek Project is being carefully monitored after another corrosion hole was found and repaired this spring.

- A seepage study will be undertaken by DNRC during the summer and fall of FY 2005 to determine whether the Main Canal qualifies for grant monies under the provisions of the Natural Resources Conservation Service's EQIP funding. The grant would be used to make canal improvements, including the construction of a fish screen and the installation of canal lining.

- Approximately 2 miles of the Nevada Creek Project's Douglas Canal was reshaped this spring.

- Surveying and modeling have been undertaken as a prelude to rehabilitating the Smith Creek Supply Canal, which feeds Nilan Reservoir.

- The crossing of the Rock Creek Project's Point-of-Rocks Canal beneath U.S. Highway 212 is under investigation. The 60-inch concrete pipe appears to be both undersized and skewed in alignment. DNRC staff have performed a survey and are constructing a model for flows in order to analyze the capacity of the crossing.

- The Upper Musselshell Water Users Association cleaned the Martinsdale Supply Canal and the Two Dot Delivery Canal. Nearly 10 miles of canal were improved.

- The section utilized grant funds disbursed by BOR to spray four state-owned canals with a polyacrylamide liner. Seepage loss from the Ackley Lake, Deadman's Basin, Nevada Creek, and Upper Musselshell Projects was markedly decreased after the liner was applied.

- Staff prepared Renewable Resource Grant and Loan Applications for two projects. A grant application was submitted for the replacement of three drop structures on the Martinsdale Outlet Canal, and a grant and a loan were requested for a feasibility study that would lead to the rehabilitation of the Deadman's Basin Supply Canal.

Water Measurement and Water Rights Activities

The State Water Projects Bureau is responsible for all water measurement and water right activities associated with state-owned water projects.

In FY 2004, the bureau collected and recorded bimonthly reservoir storage data for 18 state-owned reservoir projects. It also operated and maintained 34 permanent stream- and canal-gaging stations associated with state projects, including 2 additional stream-gaging stations on the East Fork of Rock Creek, above and below East Fork Reservoir.

Additionally, the bureau measured streamflows and maintained rating tables for staff gages on the four major tributaries immediately above Painted Rocks Reservoir. These gages are used to provide inflow data for use in implementing the *Operating Plan for Painted Rocks Reservoir*, which was first developed in FY 1999.

This data collection included tabulating and recording annual discharge summaries for all stations for the water year (October 1 to September 30).

In 1996, the State Water Projects Bureau asked the Montana Water Court to clarify its project water rights by consolidating its claims, which were originally filed for five uses (storage, irrigation, stock, domestic, and municipal), into claims for "Sale of Water" for those same purposes. The proposed clarification of purposes would allow the place of use for the water to be described in more general terms, that is, by township, range, and county only. The proposed consolidation and clarification of DNRC claims would not change the historical purpose of water use from the state projects, but only more accurately and concisely reflect that historical use. On May 12, 2000, the Montana Water Court granted all of the DNRC requests under an Order Adopting Master's Report in Case No. 76HE-166. This order also amended the DNRC water rights for the Painted Rocks Project accordingly.

In FY 2004, the State Water Projects Bureau continued settlement negotiations in the statewide water rights adjudication process to resolve objections and amendments to its project water rights in several basins. To date, the bureau has completed settlement negotiations and Water Court proceedings for the DNRC water rights at the Broadwater-Missouri Canals, Middle Creek Reservoir, Cottonwood Reservoir, and Deadman's Basin Reservoir, all incorporating the results of the Painted Rocks decision. DNRC water projects with water rights pending settlement negotiations, finalized stipulations, or Water Court actions in this regard are the Upper Musselshell, Ruby River, Fred Burr, Nilan, and Cooney (Red Lodge Rock Creek).

The bureau provides research and technical support and assistance to legal staff for resolving all water right issues on the projects. Most water right work involves settlement of objections to project water rights currently before the Montana Water Court in the ongoing statewide adjudication proceedings. Operating plans for water delivery are developed, and water use or other related land use problems on the projects are solved.

Administration of Project Lands and Leases

DNRC owns land surrounding state-owned reservoirs, supply canals, and water delivery canals. DNRC also assists DFWP in the operation and maintenance of 10 dams owned by DFWP. These lands are unique and are administered under a special set of statutes.

Noxious weed control is an ongoing problem at almost all of the department's projects. The six-year noxious weed plans, which were developed in FY 1997, are currently being updated and renewed. All weed control costs are borne by the water user associations.

Hydropower

The Hydropower Program administers the development and operation of hydropower facilities on state-owned water projects. To date, one hydropower facility, the Broadwater Power Project near Toston, has been built. With a maximum capacity of 10 megawatts, the project began generating power in June 1989. DNRC owns and operates the facility and contracts with NorthWestern Energy to sell the energy.

Earned revenues are used to pay for rehabilitating other state-owned water projects. The main purpose of these funds is to help in the maintenance and repair of state-owned water projects, which include 22 designated high hazard dams and 250 miles of irrigation canals. Most of these large projects were completed in the 1930s and 1940s and have significant needs. In a 1980 statewide inspection by the U.S. Army Corps of Engineers (COE), many of these dams were classified as unsafe due to spillway capacities that are inadequate, according to federal guidelines.

In an average year (assuming mean runoff), the facility is capable of generating roughly 56 million kilowatt-hours of electricity and earns roughly $3.5 million in revenue from energy and capacity sales. After debt payments and operating expenses, approximately $1.3 million is available to rehabilitate state-owned dams. A statutory appropriation of $500,000 per biennium is also available to fund emergency repairs and maintain an emergency repairs fund.

Hydropower earnings totaling approximately $167,000 are used for the annual partial repayment of the no-interest loan that the state received from the Northern Cheyenne Tribe for the Tongue River Dam Rehabilitation Project. DNRC received spending authority for up to $3.1 million of hydropower earnings for the FY 2002-2003 biennium for the rehabilitation of Bair and Nevada Creek Dams, and $1 million for FY 2004 for the rehabilitation of Nevada Creek—Phase II.

Generally, Missouri River flows at Toston Dam from July 2003 through June 2004 were well below average, frequently fluctuating from 40 percent to 60 percent of mean. The low flows severely reduced energy generation to 65 percent of the predicted average annual production. Annual maintenance was performed in August 2003, requiring about 180 hours of downtime. For the remainder of the year, downtime was minimal, totaling 223 hours for the entire fiscal year. As a result of NorthWestern's bankruptcy, DNRC was not paid for energy and capacity for the whole month of August and half of September 2003. The department anticipates that NorthWestern will make payment when the corporation emerges from bankruptcy. The drought, underpayment by NorthWestern, and a high bond reallocation cost contributed to a small loss of $37,366 for the fiscal year. If NorthWestern makes full payment, the project will realize net income of roughly $100,000 for the fiscal year. Statistics concerning the Broadwater Power Project during FY 2004 are shown in Table 36.

Table 36 Broadwater-Missouri Power Project in FY 2004	
Operating availability	97.5%
Gross energy generation	36,841,279 kilowatt-hours
Gross revenue from sales	$2,416,195
Investment income	$32,638
Operating costs	($357,474)
Bond payments	($2,128,725
NET REVENUE	($37,366)

Improvements to the automated control system are ongoing in a continued commitment to manage reservoir and tailwater levels better. The trash rake machine installed in 2002 is performing exceptionally well and has increased the plant's overall efficiency. As a result, the facility is generating at a higher power level for a given river flow, thereby increasing revenues from power sales. The machine has a useful life of 20 years or more, and the department should realize a payback on its investment in 5 to 7 years.

Water Management

The Water Management Bureau (WMB) provides educational, technical, and other types of support in (1) solving statewide water resource issues and policy concerns, (2) protecting Montana's interests in regional and international river basins, and (3) helping local watershed and user groups solve water management issues and problems. WMB also provides technical support to other DNRC bureaus, the Reserved Water Rights Compact Commission, and water user groups.

Watershed Management

In FY 2004, WMB staff assisted water users in 18 watersheds. Following are descriptions of examples of WMB activities in 14 of these watersheds.

Big Hole River

WMB monitored and implemented the local drought plan and provided technical support to the Big Hole Watershed Committee. Staff collected synoptic streamflow and other types of hydrologic information to mitigate the effects of drought on the Arctic grayling, a species being considered for listing under the Endangered Species Act. Staff continued to study conveyance efficiencies in the stream reaches that are critical for grayling survival and in a number of irrigation ditches.

Bitterroot River

WMB continued to serve on the board and gives staff support to the Bitter Root Water Forum. Staff provided support to develop and implement a drought mitigation plan on tributaries of the Bitterroot and to better understand how water is being used and ways to improve water use efficiency.

Blackfoot River

WMB helped the Blackfoot Challenge and more than 80 local irrigators implement a drought mitigation plan for the Blackfoot and Clearwater rivers in the summers of 2003 and 2004. Staff monitored a number of stream gages throughout the year.

Staff continued to provide technical assistance on the headwater water quality project and to assist landowners and the U.S. Fish and Wildlife Service (FWS) to develop and implement water savings projects on Kleinshmidt Flats and on other basin ranchlands.

Boulder River

Working with local irrigators, other water users, and the Boulder Watershed Group, WMB continued to collect data for assessing irrigation efficiency and water supply within the Boulder basin. Staff monitored six stream-gaging stations.

Clark Fork River

WMB continued to work closely with the Montana Consensus Council to implement *Montana Code Annotated* (MCA) 85-2-350. Under this law, enacted in 2001, the Clark Fork River Basin Task Force is preparing a water management plan for the entire Clark Fork and Flathead river basins. Staff assisted the task force in preparing a draft and a final water management plan. Staff also provided relevant research and streamflow, water use, water rights, and water law information to the task force.

WMB also provided staff support to the Upper Clark Fork Steering Committee. The steering committee has been working on water problems in the upper Clark Fork above the confluence with the Blackfoot River. In addition to providing general technical support, staff continued working on dewatering, drought mitigation actions, and the issues associated with the operation of Georgetown Lake and releases into Flint Creek. Staff continued to conduct a seepage loss and conveyance efficiency study on the main irrigation ditches on Race Track Creek for local water users.

Flathead River

WMB served as a member of the Flathead Basin Commission. WMB continued to assist with implementation of the Voluntary Nutrient Reduction Strategy for Flathead Lake and new efforts for developing total maximum daily load (TMDL) implementation plans for the Whitefish and Stillwater rivers. Staff provided technical and financial assistance to implement a major road reroute near Ashley Creek. WMB participated on the basin-wide water quantity and quality monitoring committee.

Milk River

WMB and the Glasgow Regional Office are working with BOR, local irrigation districts, and other users to solve water management and distribution concerns within the Milk River basin. Under a BOR grant, WMB has been helping the eight irrigation districts (organized into three divisions) develop and implement water conservation plans.

Four quarterly *Milk River Watershed* newsletters were published and mailed to more than 1,200 water users in the Milk River basin. WMB and the Glasgow Regional Office obtained the articles, and WMB staff edited, published, and mailed the newsletter.

WMB provided staff support to the Milk River International Alliance, which is a grassroots organization of water users from Montana, Alberta, and Saskatchewan and local, state, and federal governmental officials. WMB provided administrative, facilitative, financial, and technical support to the group.

WMB provided considerable effort to rehabilitate the St. Mary Canal and associated facilities, including the enlargement of Fresno Reservoir. WMB, in coordination with BOR, provided staff support to the St. Mary rehabilitation working group.

Missouri River

WMB continued to serve on a technical committee to assist with implementing conditions defined in PPL Montana's Federal Energy Regulatory Commission license for the Madison and Missouri river hydropower projects.

Nevada Creek

WMB worked with local water users and the Blackfoot Challenge to conduct a study of water efficiency and water quality in the watershed, including a TMDL assessment.

Ruby River

To assess dewatering problems, WMB maintained flow-rating curves current at eight streamflow sites. One of these sites has a continuous recording gage. WMB meets annually with the Ruby River Reservoir Task Force to discuss river and reservoir operations.

Shields River

In 2003, WMB, working with local water users, developed a water budget for the largest irrigation canal system in the basin, and in 2004 the bureau continued to work on the distribution of water and increasing water use efficiency. WMB monitors flows at 14 stations, including 5 that have continuous recording instrumentation.

Sun River

WMB continued to operate and collect data from five streamflow sites and one canal monitoring site; gages are located on Elk Creek, Mill Coulee, and Duck Creek. A staff member serves as chair of the Sun River Flow Committee, which is looking at the best ways to meet water needs for all types of uses in the drainage.

Tenmile Creek

WMB continued to provide staff support and facilitation to the Upper Tenmile Watershed Steering Group. The group works on issues related to streamflows, riparian habitat, water quality, and Superfund cleanup. In 2004, WMB wrote a grant application to coordinate and complete the sixth riparian restoration project, in which more than 5,000 trees and shrubs were planted in the riparian corridor, with labor provided by the Montana Conservation Corps. To date, more than 30,000 trees and shrubs have been planted in the river corridor.

Yellowstone River

WMB completed its work with the Governor's Upper Yellowstone River Task Force and continued to provide staff and technical support to the Yellowstone River Conservation District Council. In addition, staff assisted the newly formed Upper Yellowstone Watershed Group that is attempting to implement the recommendations of the Upper Yellowstone River Task Force. WMB also assisted COE with its cumulative impact assessment of the upper Yellowstone River.

Staff work for the council consisted of serving on the council's technical advisory committee responsible for scientific work plan development and providing support and assistance to the council's coordinator. Related work included helping Dawson, Yellowstone, and Stillwater Counties develop and implement work plans for floodplain management using grants that were awarded by the 2003 Legislature.

Under contract to Park Conservation District, WMB staff completed a geomorphic analysis of the Upper Yellowstone River. The final report was submitted on July 15, 2003. However, work continued on other aspects of the geomorphic analysis.

Protection of Montana's Water

DNRC has statutory responsibility to protect Montana's water resources in interstate and international water allocation and management proceedings and decisions. Following is a description of DNRC activities during FY 2004.

Columbia River

WMB continued to provide technical information and advice on issues associated with the operation of the Columbia River basin and the effects of federal decisions within Montana.

Lower Missouri River

WMB represented Montana on the Missouri River Basin Association's technical committee that reviews and recommends options for the annual operation of the Missouri River main stem system. Staff also assisted lower basin water users with the relocation of pump sites that could be impacted by high spring releases from Fort Peck Reservoir.

Milk River

WMB initiated and coordinated the submittal of Governor Martz's letter to the International Joint Commission requesting a review of the 1921 Order that apportions the flows of the St. Mary and Milk rivers between Montana, Alberta, and Saskatchewan. The commission held consultation meetings in Montana, Alberta, and Saskatchewan in late July to determine whether the order is meeting the terms of the 1908 Boundary Waters Treaty. WMB is working closely with the commission, Alberta officials, local water users, and both federal governments to facilitate the discussions. WMB is also coordinating the state's evaluation of a storage project on the Milk River that is being proposed by Alberta.

North Fork of the Flathead River

WMB coordinated meetings between British Columbia and the Flathead Basin Commission regarding the creation of an agreement between Montana and British Columbia. The Premier of British Columbia and Governor Martz signed the Environmental Cooperative Agreement in September 2003. The agreement sets up a framework to resolve conflicts and to improve cooperation on the management of resources that Montana shares with British Columbia.

WMB has also been actively involved with the newly proposed coal mines located just north of the international border on Howell and Cabin creeks and the newly

proposed coal bed methane lease auctions within the North Fork River drainage of British Columbia.

Poplar River

WMB continued to coordinate with Saskatchewan Water Corporation regarding the annual release of water from Cookson Reservoir into the East Fork of the Poplar River, in accordance with the International Joint Commission's recommended apportionment. Staff worked with the Geological Survey of the U.S. Department of the Interior (USGS) to ensure that Montana receives its rightful share.

Yellowstone River

House Joint Resolution 35 directed the Legislative Council to designate an interim committee to initiate a study to determine how the Yellowstone River Compact can more effectively protect Montana's water users on the four interstate tributaries of the Yellowstone that are shared with Wyoming. WMB has been implementing the studies that are defined in that resolution. During summer 2004, Montana was able to only partially satisfy two 1886 water rights in the Tongue River drainage, and very little water was provided to irrigators in the Powder River basin of Montana.

Protection and Use of Montana's Groundwater

This section presents examples of WMB's groundwater protection and use activities that occurred in FY 2004.

WMB continued to chair the Technical Advisory Committee for the Powder River Basin Controlled Groundwater Area in southeastern Montana. The Technical Advisory Committee oversees monitoring and the collection of baseline data as part of the controlled groundwater area.

WMB continued to work with the water resources regional offices in reviewing and analyzing numerous and complex groundwater right applications, water right complaints, and petitions for setting up controlled groundwater areas.

WMB also assisted with the monitoring of groundwater within the Yellowstone National Park Controlled Groundwater Area. A WMB staff person continued to chair the Yellowstone National Park Technical Oversight Committee and served as a member of the Groundwater Assessment Steering Committee.

Water Resource Education

WMB provides water resource education to water users and other water interests across the state. The goal is to provide citizens with the tools and knowledge to solve their own watershed and water resource problems. WMB staff at the Montana Watercourse supervised the multiple activities of three full-time water education specialists at Montana State University: the Project WET Montana coordinator, the Montana volunteer water monitoring coordinator, and the Montana wetlands education coordinator. Specific activities in FY 2004 include the following.

Staff of the Montana Watercourse facilitated a steering committee that designed and carried out a "Know Your Watershed" Workshop for a couple of new watersheds. Staff also designed and carried out five wetland stewardship workshops and three wetland and riparian planning and protection workshops across the state.

Staff also conducted six WET (Water Education for Teachers) workshops for teachers designed to help them better teach students about water, rivers, streams, and Montana's water resources. Staff also conducted a watershed tour in the Blackfoot drainage for teachers. Watercourse staff assisted other WMB staff in conducting a water commissioner training workshop in Helena. Staff drafted and completed a *Wetland Planning and Protection Guide* for Montana citizens and agricultural users. They are also working with the Milk River water users on an outreach program for the rehabilitation of the St. Mary Canal and diversion works.

The Montana Watercourse director restructured a position within the Montana Watercourse, hired two new staff, and raised more than $350,000 in grant funds.

WMB staff was actively involved with the Montana Watershed Coordination Council. WMB staff also participated in a number of its work groups: the Agenda Committee, Watershed Recognition Work Group, Retreat Work Group, and Water Activities Work Group.

Watercourse staff coordinated and carried out the Montana Watershed Conference in Great Falls in December. Over 250 watershed users and coordinators participated, and the conference was a success.

Improvement of Statewide Water Management

Drought Mitigation

Montana entered its fifth consecutive year of drought. WMB supported and coordinated activities of the Governor's Drought Advisory Committee, members of which are listed on the next page. Last year, the drought committee held meetings almost monthly. The *2004 Drought Status Report* was prepared and submitted to the governor in June. WMB supports and works closely with Lt. Governor Ohs, who is the chair of the committee. The committee is responsible for implementing the *Montana Drought Response Plan*. The *2004 Drought Status Report* describes the potential for drought and different response actions, if appropriate, at the state and local level. Staff spent considerable time helping local water users and groups mitigate drought impacts. Staff also participated in drafting the National Integrated Drought Information System on behalf of the Western Governors' Association.

WMB prepared and distributed monthly water supply and moisture condition reports to local, state, and federal governments; statewide news media; and other interested parties. In addition, the drought conditions that prevailed over portions of the state in the winter, spring, and early summer of 2004 caused the staff to continually disseminate information and news releases about drought conditions and ways to mitigate drought impacts.

Montana Drought Advisory Committee	
Karl Ohs	Chair, Lt. Governor
Betsy Allen[1]	Senator Burns' Office
Wayne Berkas[1]	U.S. Geological Survey
Stan Bradshaw[1]	Trout Unlimited
Marc Bridges	Montana Department of Livestock
Jay Bodner[1]	Montana Stockgrowers Association
Sarah Carlson[1]	Montana Association of Conservation Districts
Carol Crockett	Montana Department of Commerce
Ed Diemert[1]	Montana Association of Counties
Tim Felchle[1]	U.S. Bureau of Reclamation
Larry Gruel[1]	Pennsylvania Power and Light
Roy Kaiser[1]	U.S. Natural Resources Conservation Service
Gina Loss[1]	National Weather Service
Dan McGowan	Disaster and Emergency Services
Jim Melstad	Montana Department of Environmental Quality
Mike Murphy[1]	Montana Water Resources Association
Ray Nelson[1]	Northern Rockies Fire Coordination Center
Peggy Stringer[1]	Montana Agricultural Statistics
Jack Stults	Montana Department of Natural Resources and Conservation
Kathleen Williams	Montana Department of Fish, Wildlife and Parks
Ron Zellar	Montana Department of Agriculture

1. Non-voting member

Water Resource Reference Guide

WMB, in cooperation with USGS, is continuing to prepare the *Water Resource Reference Document for the Year 2000*. The document describes the changes in water use and water supply throughout the last century and during the year 2000. This document should benefit water managers, water professionals, and teachers in the 21st century.

Integration of Water Quality and Quantity

WMB continued to work on integration of water quality and quantity by reviewing nonpoint pollution discharge permits and participating in DEQ's assessment of priority streams for listing as water-quality-impaired. WMB also participates on the Water Pollution Control Advisory Board and on the Water Activities Committee, which advise DEQ on its Nonpoint Discharge Elimination System Program.

Water Commissioner Training

Staff conducted water commissioner training in Helena and periodically helped individual water commissioners.

Flathead Basin Commission

The Flathead Basin Commission was transferred from the Governor's Office to DNRC for the 2005 biennium for administrative purposes. The purpose of the

commission is to protect the existing high quality of the Flathead Lake aquatic environment; the waters that flow into, out of, or are tributary to the lake; and the natural resources and environment of the Flathead basin. The members strive to identify the basin's water quality problems and work collectively to implement the most effective solutions.

Because of the size of the Flathead Basin and its environmental and economic importance, the commission has a broad-based membership. Six citizen members, appointed by the governor, serve three-year terms. Agency members include the superintendent of Glacier National Park; the supervisor of the Flathead National Forest; a councilperson of the Confederated Salish and Kootenai Tribes; other representatives of federal, state, and local land-managing and regulatory agencies; and a representative of the premier of British Columbia. Currently serving on the commission are:

David DeGrandpre, Chair	Lake County Planning
Art Vail, Vice-Chair	Citizen Member
Paul Smiley	Citizen Member
Gary Wicks	Citizen Member
Bruce Tutvedt	Citizen Member
Marilyn Wood	Citizen Member
Everit A. Sliter	Citizen Member
Mick Holm	Superintendent, Glacier National Park
Cathy Barbouletos	Supervisor, Flathead National Forest
Charlie Johnson	Flathead County Road Superintendent
Marc Vessar	Flathead Conservation District
Ron Trahan	Tribal Council Representative, Confederated Salish and Kootenai Tribes
Jon Dahlberg	DNRC, Northwestern Land Office
Ex-Officio Members	
Rich Moy	DNRC, Water Management Bureau
Ralph Carter	U.S. Bureau of Reclamation
Jon Jourdonnais	PP&L Montana
Julie DalSoglio	U.S. Environmental Protection Agency
Dan Vincent	DFWP
Art Compton	DEQ
Mark Holston	Information Officer, Flathead Basin Commission

Other Water Management Activities

WMB continued to assess the effects of deregulation on the operation of the Toston hydropower facility and offers for the purchase of the Power Purchase Agreement with NorthWestern Energy. Staff reviewed the feasibility of hydropower development at state-owned storage projects.

WMB staff continued to lay out and publish the Water Resources Division's newsletter, the *Milk River Watershed* newsletter, flyers, and other documents of the division, as well as design and update the web page for the Water Resources Division.

Water Operations

The Water Operations Bureau administers the Dam Safety, Floodplain, and Water Measurement Programs and provides staff support for the Board of Water Well Contractors.

Dam Safety Program

The primary purpose of the Dam Safety Program is to ensure that dams that have the potential to cause loss of life downstream, if they fail, are properly constructed, maintained, and operated. An operation permit is issued for high hazard dams that have been found to be safe. Currently, 89 dams in the state are permitted, high hazard dams. Five additional high hazard dams are expected to be permitted. The Dam Safety Program regulates an additional 2,776 low and significant hazard dams. These dams do not require a permit.

Permitting of High Hazard Dams

To obtain or renew an operation permit, the high hazard dam owner must review and update the dam's emergency action, operation, and maintenance procedures and have an inspection conducted by a professional engineer. Often, conditions placed on an operation permit require that certain dam deficiencies be addressed. Failure to meet the conditions of an operation permit can result in a restriction on the reservoir level and/or a fine. The Dam Safety Program issued 12 operation permits in FY 2004.

Any construction on a dam that could potentially be a threat to the dam's integrity requires a construction permit. The permit application must be accompanied by design plans and specifications that are put together by a professional engineer. The following dams had active construction permits for FY 2004.

- Bootjack Lake (Missoula County)
- Lake Frances North Dam (Pondera County)
- Carbone Dam (Carbon County)
- Flint Creek Dam/Georgetown Lake (Deer Lodge County)
- Lower Willow Creek (Granite County)
- Dry Fork (Blaine County)
- South Hills Stormwater (Missoula County)
- Upper Taylor Spillway (Powell County)
- Nevada Creek Phase II (Powell County)

When a new dam is constructed or an existing dam repaired, the owner is required to apply for a hazard classification. A hazard classification is a determination of the potential for loss of life to occur downstream due to dam failure. Five hazard analyses were completed in 2004.

Awareness/Education

During this fiscal year, the Dam Safety Program sponsored a workshop for engineers on seismic analysis techniques for dams. The workshop presented the results of a three-year study where ground-shaking maps for the state of Montana were developed. The maps will help engineers more effectively design dams to resist damage from earthquakes. Approximately 80 people from all parts of the state attended.

Emergency Action Plan Update and Testing

State law requires that emergency action plans (EAPs) be updated on an annual basis for all high hazard dams. In addition, tests of the plans should be completed frequently. To accomplish these goals, an emergency action plan coordinator works with dam owners to ensure that EAPs are up-to-date and regularly tested. This position is funded using only federal grant monies.

For FY 2004, 10 plans were reviewed, 5 tabletop exercises were conducted, and 8 dam owners were provided assistance with updates. Plans are under way to test several additional dam EAPs in FY 2005.

Several benefits result from testing the plans. County officials learn about the intricacies of dams and develop a working relationship with dam owners. Testing the plan forces the dam owner to evaluate the adequacy of emergency repair materials, examine access and evacuation routes to and from the dam, and think about potential downstream hazards. The public benefits by having increased owner awareness and well-developed emergency plans.

Emergency Action Plan Inundation Maps

Most of the inundation maps contained in EAPs for high hazard dams are copies of USGS quadrangle maps. Some of these maps are hard to read. In an effort to improve the quality of the maps, the Dam Safety Program is in the process of taking aerial photos. Aerial photos provide much better detail. They are also easier for county officials to use because they can recognize landmarks on an aerial photo more readily than on a topographic map.

The objective of the program is to revise EAP maps, using aerial photography as an aid to illustrate and identify downstream hazards. Five inundation areas were photographed in FY 2004. Plans are in place to complete three additional areas in FY 2005, depending on the availability of pilots and the severity of the fire season. The goal is to eventually put all of the inundation maps for the state's high hazard dams that DNRC regulates into more usable digital format. This program is in its fifth year and will be continued indefinitely.

Earthquake Ground-Shaking Map Development

Earthquakes are capable of causing great damage to dams. Montana is one of the most seismically active states in the country and potentially could have a large earthquake of magnitude 7 or greater. Therefore, it is necessary to evaluate dams to see how resistant they are to damage and failure from ground shaking. In order to do this, one must have an idea of what magnitude earthquake could occur in the areas near dams.

To provide engineers with accurate data to assess the ground-shaking potential near a dam or other structure, DNRC requested funding from the Federal Emergency Management Agency (FEMA) to develop detailed ground-shaking maps specific to Montana. DNRC then contracted with a corporation that is one of the world leaders in seismic hazard analysis to develop the maps. Assisting with the project are representatives from the Montana Bureau of Mines and Geology (MBMG), Montana Tech of The University of Montana, BOR, Montana State University, and FEMA.

The maps are complete and will be released soon. In addition, the state has developed a set of analysis procedures to assist design engineers in determining whether an existing dam is at risk from damage due to ground shaking.

Board of Water Well Contractors

The Board of Water Well Contractors is responsible for licensing water well drillers, water well contractors, and monitoring well constructors. The board, which is attached to DNRC for administrative purposes, establishes minimum water well and monitoring well construction standards and enforcement and training procedures. Composed of five members, the board consists of one technical advisor/ hydrogeologist appointed by MBMG, two licensed Montana water well contractors appointed by the governor, one member appointed by the DNRC director, and one member appointed by the DEQ director. Each member serves a three-year term. Current board members are:

Pat Byrne, Chair
Great Falls
Water Well Contractor

Laurence Siroky, Vice-Chair Helena DNRC	Eric Regensburger Helena DEQ
Robert N. Bergantino Butte MBMG	Kevin Haggerty Bozeman Water Well Contractor

Licensing

During FY 2004, 284 people were licensed in three categories: water well contractors, monitoring well constructors, and water well drillers. Sixteen of these were new licenses. Nineteen former licensees did not renew their licenses.

Complaints and Investigations

During FY 2004, 21 formal complaints were filed against drillers. Twelve of these complaints required board action. In addition, the board investigated reports of three unlicensed drillers.

Public Awareness/Education

Education was provided to drillers on subjects including well construction and development, treatment of wells for bacteria, soil and rock identification, and the use of global positioning system data and MBMG's Groundwater Information Center (GWIC) data for well description and location. Classes were conducted in Billings, Missoula, Bozeman, Kalispell, and Libby. The board also visited drillers at drilling projects throughout Montana to provide education and education materials.

The board is working with GWIC to educate drillers on the use of DrillerWeb, Montana's Internet drill log entry and submittal site for licensed water well drillers.

Information for property owners about wells is distributed by the board to the public through county health offices and DNRC regional offices. A newsletter,

Well Developments, is published and distributed to license holders and other interested persons. Important water well drilling regulations and advice to the public are maintained on the board's Internet site.

The board also responded to hundreds of telephone requests by the public for information on water well and groundwater issues.

Floodplain Management

The Floodplain Management Section is responsible for the oversight of 125 locally administered floodplain management programs throughout Montana.

The primary goal of the program is to reduce the loss of life and structural property through wise floodplain development. The secondary goals are to reduce the loss of functional floodplains and reduce the erosion of stream banks due to unwise floodplain development. The program was able to get a grant to hire a half-time person. Past budget cuts had reduced the staff of the floodplain program, resulting in reduced ability to assist local governments in managing a very complex program that benefits all citizens of the state.

Flood Mitigation Assistance Program

The primary purpose of this program is to remove repetitive loss (multiple insurance claims) structures from the floodway or 100-year floodplain. The secondary purpose is to elevate structures to 2 feet above the base flood elevation. Structural project grants and planning grants are greatly limited because of the requirement that this money can be used only for properties with multiple insurance claims. In FY 2004, Lincoln County applied for and was given a grant to write a flood annex to the *County Comprehensive Hazard Mitigation Plan*. This plan will identify possible future flood mitigation projects in Lincoln County. No grant applications for flood mitigation projects were processed during FY 2004.

State Floodplain and Community Assistance Program

General technical and engineering assistance was given to local and state governments, private property owners, and engineering consulting firms. During FY 2004, the Floodplain Management Program sent out approximately 132 written responses to floodplain issues and concerns. There were 7,428 e-mails received, and 4,108 e-mails were sent out during the fiscal year. Approximately 1,020 phone contacts were made, of which 45 percent provided technical assistance and 6 percent required follow-up. Numerous violations have been addressed this past year, and most were remedied without legal activity.

Floodplain Study Program

Floodplain management studies are ongoing in Gallatin, Lewis and Clark, Missoula, and Yellowstone Counties. Also, the floodplain program is working closely with COE on flood studies in Glendive, Miles City, and Libby.

Public Awareness/Education

Staff provided support and education to the Upper Yellowstone Task Force, the Yellowstone River Conservation District Council, and numerous other groups throughout the year.

The Association of Montana Floodplain Managers held its fifth annual conference in Big Sky, attended by 105 people. The conference was a success and included people from numerous professions. The DNRC program manager was re-elected executive director of the association for the next year.

Water Measurement Program

The purpose of the Water Measurement Program is to provide technical information and assistance in the measurement of surface water diversions. The program focuses on streams where dewatering causes conflicts between water users or impacts resources. Program staff continue to investigate streams for program inclusion. The program also analyzes the effectiveness of drought response actions and presents the results to various watershed groups and organizations.

Big Hole River

The Water Measurement Program continues to represent DNRC at watershed committee meetings, to provide snowpack and streamflow data to the committee, and to assist various water measurement efforts in the basin. The Drought Management Plan devised by the committee will be implemented again this year because of low flows.

Burnt Fork

The Burnt Fork is a Bitterroot River tributary near Stevensville. The Water Measurement Program was contacted again this spring to verify the rating table made last year for the Burnt Fork gaging station. The program was to obtain high flow measurements this year, but there was no high flow in the Burnt Fork.

Georgetown Lake

The Water Measurement Program continues to work with various groups that have conflicting interests in Georgetown Lake water and lake management. The program continues to model various management scenarios at the lake and distribute findings, projections, and forecasts to Granite County and to the Flint Creek Dam Advisory Committee. The program continues to operate a water level recorder on North Fork Flint Creek for use in modeling snowmelt peak inflows to the lake.

Jefferson River

The Water Measurement Program continues to work with the Jefferson River Watershed Council. The program reinstalled river gages this spring. The program is assisting and teaching consultants hired by the council to develop rating curves and to take flow measurements on the rivers and major canals in the basin.

The Water Measurement Program continues to analyze and disperse the information from the gages and from major irrigation diversions. The program finished a canal seepage report this year. The report will help the council and irrigation companies to pinpoint canal segments for rehabilitation projects to reduce seepage and therefore reduce amounts of water diverted from the river.

Musselshell River

Installation of measuring devices continues on Musselshell River diversions. Several water development grant applications were received requesting partial

reimbursement for installation of headgates and measuring devices. The Lewistown Regional Office is assisting with these efforts.

Rock Creek

Rock Creek is a tributary to the Big Hole River near Glen. There is considerable conflict between users during low water years. The Water Measurement Program has responded to this situation by installing and rating measuring devices on irrigation diversions and on Rock Creek at its mouth and at its entrance to the valley. Releases from the upper reservoir are monitored so that water may be more effectively allocated.

Outreach Efforts

The Water Measurement Program is expanding efforts to other watersheds. This year staff visited Dupuyer Creek with DFWP personnel to assess water measurement needs and water lease possibilities. Program staff have also been in contact with the Lower Tenmile Creek Watershed Group and have decided to install gages on Silver Creek and Prickly Pear Creek in the Helena Valley.

Water Rights

The mission of the Water Rights Bureau is to ensure the orderly appropriation and beneficial use of Montana's waters. The two main programs are (1) adjudication, in which the bureau assists the Water Court in identifying and evaluating pre-1973 water uses, and (2) new appropriations, which involve the administration and regulation of post-1973 water rights in Montana. In addition to operating the two programs, the Water Rights Bureau is responsible for carrying out the Montana Constitution directive to maintain a centralized water right record system.

Water Right Records

The two types of records most accessed by the public and the staff are in microfiche and electronic formats. With the water rights database accessible on the Internet, the electronic records are becoming the most popular.

Efforts continue to enhance the wide variety of water rights information, forms, and data now available on the Internet at:

www.dnrc.state.mt.us/wrd/home.htm

For geographic representation of water rights data, go to the Natural Resource Information System (NRIS) site at:

www.nris.state.mt.us/apps/dnrc2002/waterrightmain.asp

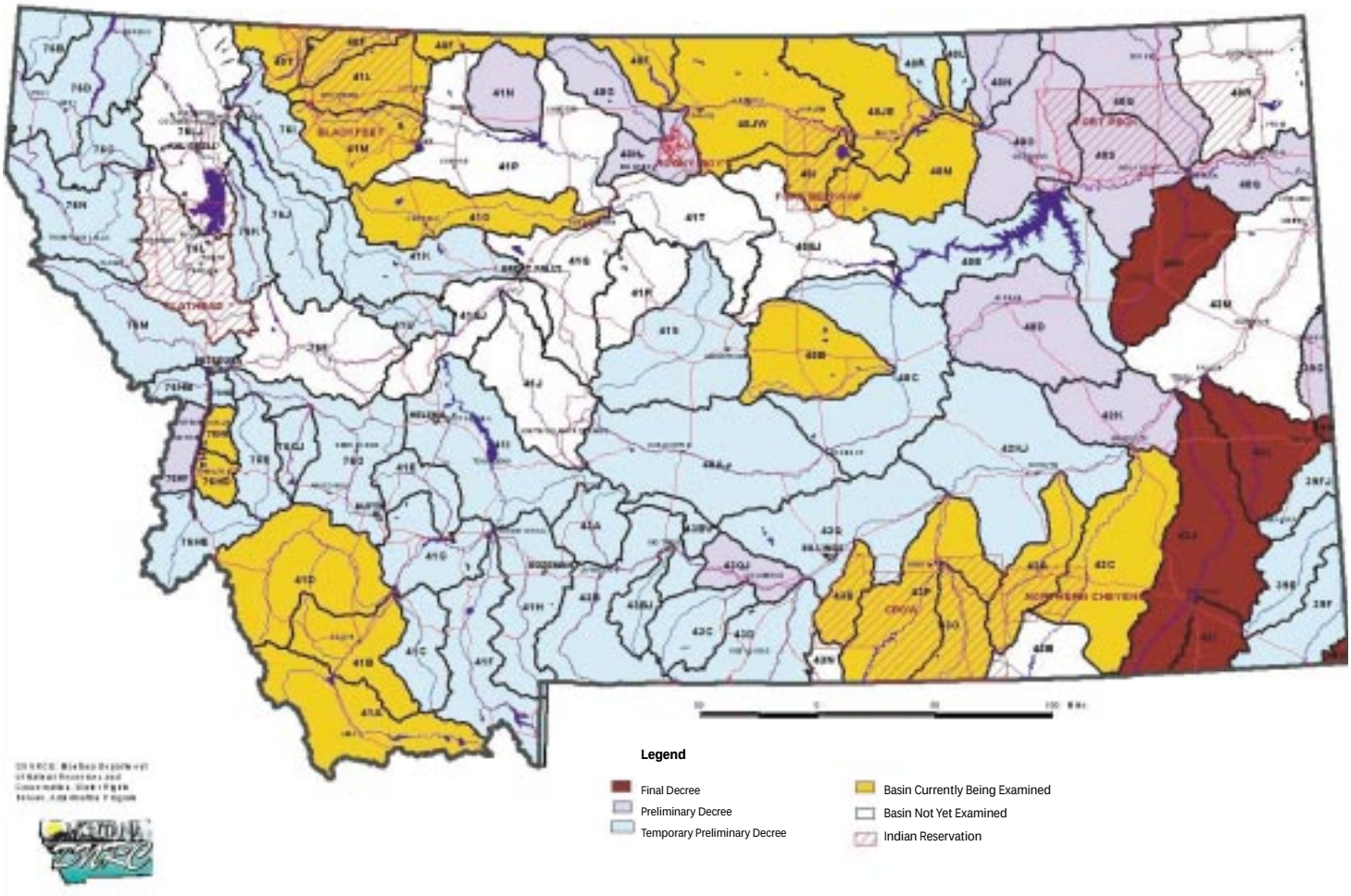
Enhancements to the water rights database continue to improve flexibility in information gathering and report generation, increase mapping capabilities, and improve customer access and service.

Adjudication

During FY 2004, 1,172 claims were examined in four of the eight Water Resources Division regional offices. Staff in these offices also provided post-decree assistance to the Water Court. Regional office staff joined the court in working with hundreds of citizens to resolve issues and disputes on pre-1973 water use claims.

Figure 33 shows the status of the adjudication in Montana's basins.

Figure 33
Montana General Adjudication Status as of January 2004



Staff from the Central Office, Bozeman Regional Office, Water Court, and Eighteenth Judicial District Court worked together to enforce the Water Court's West Gallatin River Temporary Preliminary Decree (Basin 41H), a portion of the Temporary Preliminary Decree on Hyalite and South Cottonwood creeks (Basin 41H), and the Upper Shields River (Basin 43A). Bozeman Regional Office staff are currently preparing enforcement documents for Cottonwood Creek (Basin 43A) and Rock Creek (Basin 43A) for the 2005 irrigation season. Staff from the Central Office, Lewistown Regional Office, Water Court, and Fourteenth Judicial District Court worked together to enforce the Water Court's Temporary Preliminary Decrees (Basins 40A and 40C) on over 200 miles of the Musselshell River and two tributaries, Careless Creek and Swimming Woman Creek. Staff from the Central Office,

Billings Regional Office, Water Court, and Sixth Judicial District Court worked together to enforce the Water Court's Temporary Preliminary Decree on Sweet Grass and Cayuse creeks (Basin 43BV), Big Timber Creek (Basin 43B), and Mill Creek (Basin 43B).

New Appropriations

Applications for various types of water rights are received each year. Table 37 lists applications received during FY 2004. These water rights applications vary in complexity depending on each region's water supply, area-specific competition for water, and the specific project request. Staff in the division's eight regional offices process these applications.

Table 37
Water Rights Applications in Fiscal Year 2004

	Received	Processed
Permits	292	226
Changes	127	87
Groundwater certificates	3,059	4,126
Replacement wells	49	45
Basin closure petitions	2	2
Exempt water rights	320	192
Stockwater permits	103	96
Redundant wells	4	0
Water right ownership updates	4,382	4,058
Extension of time	46	58
Project completion certifications	112	80

The backlog on these applications, and the time it takes to process them, are growing in most regions of Montana. The number of ownership updates and groundwater certificates has increased in recent years because of improved compliance with the law, which requires that ownership updates be part of the realty transfer certificates that must be filed with the county for every realty transfer in the state. The level of scrutiny given to permit and change applications has increased due to greater public concerns for environmental review, basin closures, groundwater-surface water connectivity, drought, the complexity of dealing with limits to water availability, and the need to avoid adverse effects. At the same time, the number of people and amount of funding available to work on these applications have remained stable or decreased because of hiring freezes and other fiscal considerations.

When applicants and objectors are unable to settle their differences, the file moves into the hearings process. During FY 2004, nine hearings were held. In general, permit and change applications continue to be more complex and contentious. Hearings are now being scheduled at least a year from the receipt of objections.

The Water Rights Bureau contracted with a private entity to hold one hearing. Rather than using that process again, the bureau hired another hearings officer and has also assigned some hearings to the division's regional office managers.

Two controlled groundwater areas were established, one in the Horse Creek area located southeast of Absarokee, and the other at the Bitterroot Valley sanitary landfill near Victor. Petitions are pending at additional sites across Montana.

Regional Offices

The primary function of the division's eight regional offices is to work directly with the public in implementing programs for which the division is responsible. The regional offices play a large role in the accomplishments already discussed in this report concerning the division's programs. In addition, areas of special interest in the work of the regional offices over the past year are highlighted here.

Billings

An order was issued on February 12, 2004, establishing the Horse Creek Temporary Controlled Groundwater Area, covering 4,600 acres near Absarokee. New groundwater users within this area will need to obtain permits prior to drilling for and using groundwater, with testing and monitoring requirements now in effect. The Billings Regional Office is providing assistance to the District Court and Montana Water Court with enforceable decrees on Sweet Grass Creek, Big Timber Creek, and Mill Creek. A Temporary Preliminary Decree was issued November 14, 2003, for Basin 42KJ (the Yellowstone River drainage between the Bighorn and Tongue rivers), and staff started examining 4,689 claims in Basin 42C (lower Tongue River) on January 26, 2004. Staff have been participating in public meetings and working with two district courts and the State Water Projects Bureau to administer decreed and state project contract water, while assisting new water commissioners on the Tongue River and Rock Creek. The Billings office is providing assistance on the Yellowstone River Compact (which addresses interstate rivers) at annual and technical team meetings with Wyoming. Staff are also working with the Tongue River Reservoir Operating Committee at monthly meetings and the Northern Cheyenne Tribe on its water administration process. Coal bed methane continues to be a concern of southeastern Montana water users, with related water quality and water quantity concerns involving both surface water and groundwater sources. The Billings office has been working with DEQ on a TMDL study of both the Tongue and Powder River drainages.

Bozeman

The support given by the Bozeman Regional Office to the District Court and the Water Court for water rights enforcement projects has increased as interest has grown in the administration of water rights in local drainages. Staff provided support for the establishment of a Gallatin Watershed Group and participated in a task force appointed by the Gallatin County Commission to identify water resource issues and potential solutions. The Sypes Canyon Temporary Controlled Groundwater Area was extended for another two years so that a study could be completed. A petition was received for a controlled groundwater area around the Four Corners area, just west of Bozeman, that would address water quality and quantity issues related to major planned development within the proposed area. Good progress has been made in reducing the backlog of forms to be processed, both locally and with the help of the Helena central office staff. The office completed a move to a new state office building.

Glasgow

Glasgow Regional Office staff provided exemplary assistance in the implementation and database conversion of their files and other regional office files into the new Oracle-based water rights database. Staff helped five eastern Montana conservation districts process changes to their reserved water rights and

conduct water appropriation planning for a major industrial coal-fired generation plant proposal and the warm water fish hatchery below Fort Peck Dam. Under a BOR and DNRC cooperative agreement, Glasgow staff continue to help the Milk River Project irrigation districts and the Joint Board of Control with water conservation planning as part of a joint effort. Increased water measurement under the water conservation plans was instrumental in providing an equitable distribution and allocation of water during recent drought conditions. Glasgow staff provided technical and planning assistance to the St. Mary Rehabilitation Group to develop a long-term solution to water shortages and a failing infrastructure.

Havre

Havre Regional Office staff continue providing considerable cooperative technical assistance to the Milk River Technical Working Group, the St. Mary Rehabilitation Group, the Eastern Tributaries Working Group, and the Milk River Joint Board of Control for the eight irrigation districts that make up the Milk River Irrigation Project. In cooperation with county commissioners, conservation districts, BOR, USGS, Canadian Saskatchewan Water, the Prairie Farm Rehabilitation Administration, Water Survey Canada, and all water users, staff work effectively to reduce waste and improve equitable water delivery to mitigate the negative effects of the drought. Havre staff work constructively with the staff of the DNRC Reserved Water Rights Compact Commission on the negotiation of the Blackfeet Tribe's reserved water right and on the administration of the negotiated reserved water rights compacts for the Fort Belknap and Rocky Boy's Indian Reservations.

Helena

As southwest Montana entered its sixth year of drought, the Helena Regional Office saw a continued increase in the development of groundwater wells for irrigation. The water level in BOR's Clark Canyon Dam in the headwaters of the Beaverhead River was severely low heading into the 2004 irrigation season. No water was delivered to East Bench Irrigation District contract irrigators. The regional office received 15 applications for new water permits for groundwater wells for irrigation in the Beaverhead River basin. Staff provided information and guidelines to applicants, who have to prove that their proposed wells are not immediately or directly connected to any surface water (MCA 85-2-342, Upper Missouri River Basin Closure).

Water commissioners have been assisted through workshops partially conducted by the regional office. In addition to the workshops, materials and individual instruction were given to water commissioners who had unique situations and concerns. Spreadsheets were designed to assist with the management of a stream and reservoir, and to save some individual water users the cost and downtime associated with installing flow meters.

Kalispell

The Kalispell Regional Office continues to work with the Reserved Water Rights Compact Commission on the negotiation of the Confederated Salish and Kootenai Tribes' water right. The compact commission and the tribes want DNRC to examine claims in the Jocko River drainage basin, and the Kalispell office has started the examination of many of the claims.

The Kalispell office has seen a steady increase in new and more complicated appropriations applications, mainly for groundwater wells for new subdivisions and surface water for fisheries and fish and wildlife ponds. Several of the new

groundwater well applications generated objections that added to the office workload, delayed the projects, and placed a financial hardship on the developers. Despite the increase in workload and the complexity added by the increased number of objections, the Kalispell office remains current in its processing of new appropriations applications and has begun to reduce its backlog of notice of completion of groundwater development forms.

Lewistown

The Lewistown Regional Office continued providing technical assistance to water users, the District Court, and the Water Court for water right enforcement projects on the Musselshell River, Careless Creek, and Swimming Woman Creek. Support was provided in the form of hydrological evaluation, water law, project mapping, records research, measuring device selection and location, and funding assistance.

Staff provided construction oversight for the Ackley Lake inlet canal rehabilitation project to increase delivery efficiency.

Staff also assisted other regional offices with water right application processing to reduce backlogs in those offices.

Missoula

The Missoula Regional Office worked with DFWP, Trout Unlimited, and the State Water Projects Bureau to negotiate renewal of the contract for Painted Rocks Reservoir water for instream flow. A "life of the project" contract was agreed upon, and in return Trout Unlimited secured $400,000 from the Bonneville Power Administration to be used for future rehabilitation needs of the Painted Rocks Project. The Missoula office also operated the project, regulating the outflow to store and deliver water, and coordinated repair and maintenance with the State Water Projects Bureau and the water users.

An order designating the Bitterroot Sanitary Landfill Controlled Groundwater Area was signed in February 2004. The order restricts well drilling in an area south of Victor where groundwater is contaminated. In May 2004, the order was modified to allow water rights to be obtained for specific existing wells drilled for domestic use.

The Missoula office provided support to the Water Court for post-decree assistance in the Bitterroot Valley and for certified claims in Union Creek, a Blackfoot River tributary.